RCRA Subtitle C Compliance Evaluation Inspection

American Plating Company, Inc.
4004 East Monument Street
Baltimore, MD 21205

County: City of Baltimore

RCRA Identification Number: MDD054909072

NAICS Code: 33281

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Table of Contents

Section		Page
1.0	Background	3
2.0	Metal Finishing Processes	3
2.1	Iridite Line	
2.2	Anodize Line	
2.3	Zinc Barrel Line	
2.4	Zinc Still Lines	
2.5	Precious Metal Department	
2.6	On-Site Facility Laboratory	
3.0	Wastewater Treatment Process	3
4.0	Trench and Sump Evaluation	4
4.1	Trench and Sump Measurements	
5.0	XRF Readings	4
6.0	Attachments	4

1.0 Background

On February 9, 2011, the United States Environmental Protection Agency, Region III ("EPA"), Land and Chemicals Division, Office of Land Enforcement conducted an unannounced Compliance Evaluation Inspection ("CEI") under the Resource Conservation and Recovery Act ("RCRA"), as amended, 42 U.S.C. Sections 6901 et seq., of American Plating Company, Inc. (herein after referred to as "American Plating" or "Facility"). The U.S. EPA was represented by Mr. Andrew Ma, Mr. Ken Cox, Ms. Jeanna Henry, Mr. Gerard Crutchley, Mr. Justin Young, and Mr. Jose Reyna. The Maryland Department of the Environment ("MDE") was represented by Baruch Onyekwelu of MDE's Hazardous Waste Program. The Facility was represented by Mr. David Naumann, Mr. Barisua ("Barry") Ikpe, Mr. Johnny Naumann, and Mr. Abe Vizhansky.

The inspection team arrived at the Facility at 9:05 AM, and met with Mr. Dave Naumann, President. Mr. Dave Naumann led EPA inspectors to the Facility's main office trailor, and Mr. Dave Naumann contacted Mr. Ikpe and Mr. Vizhansky in order to have them assist with escorting EPA inspectors around the Facility. While the inspectors were waiting for Mr. Ikpe and Mr. Vizhansky, the inspectors identified themselves and presented their credentials to Mr. David Naumann. Ms. Henry also explained the purpose of the inspection. Ms. Henry indicated that the purpose of the CEI was to evaluate the Facility's current metal finishing processes, the Facility's Wastewater Treatment System, and the Facility's trench and sump connected to the Wastewater Treatment System. When Mr. Ikpe and Mr. Vizhansky arrived to the office, it was decided that Mr. Vizhansky would lead Ms. Henry and Mr. Onyekwelu through the Facility's metal finishing processes, and Mr. Ikpe would lead the rest of the inspection team to the wastewater treatment area. EPA inspectors Cox and Reyna would evaluate the wastewater treatment process, while EPA inspectors Ma, Crutchley and Young would evaluate the trench and sump near the wastewater treatment area.

Each section of this CEI report (i.e., the Metal Finishing Processes, the Wastewater Treatment Process, and the Trench and Sump) was written separately by a different EPA inspector and compiled into one CEI report. EPA inspector Henry completed the "Metal Finishing Processes" section of the CEI report. EPA Inspector Cox completed the "Waste Water Treatment Process" section of the CEI report. EPA inspector Ma completed the "Trench and Sump" and the "Measurements and XRF Readings" sections of the CEI report. EPA inspector Young provided the XRF measurement data in Attachment #8.

The information included in this CEI report are the results of statements made by the Facility representatives, materials shown to the inspectors by the Facility representatives during the inspection, information and documents provided by the Facility representatives to EPA during and after the inspection, and measurements taken by EPA inspectors.

2.0 Metal Finishing Processes

2.1 Iridite Line

The Facility operates an Iridite Line, also known as chromate conversion coating. Please refer to Photograph 1 MFP of the Metal Finishing Processes (MFP) Photographic Log included as Attachment #1. The Iridite line is used to chemically treat aluminum substrates to inhibit corrosion. Please refer to the Facility's Floor Plan, included as Attachment #2, which identifies the location of the Iridite Line and its associated tanks. The table below summarizes the contents of the Iridite Line tanks and identifies which tanks are hard-piped to the Facility's wastewater treatment (WWT) system.

Tank No.	Contents	Piped to WWT System	Comments
IR 01	Soak Cleaner	Yes	Detergent cleaner used to remove dirt, grease, oils, etc. from parts. If required, this cleaner can be pumped to the WWT system for on-site treatment.
IR 02	Etch Cleaner	No	Alkaline chemical etch with a pH of 12 to 14.
IR 03	Cold Water Rinse	Yes	Tap water.
IR 04	Cold Water Rinse	Yes	Tap water.
IR 05	Deoxidizer	No	Solution of nitric acid. When solution is changed-out, it will be pumped into drums and introduced into the WWT system at "the pit."
IR 06	ARCOL®	No	Solution containing hydrofluoric acid used to remove silica (i.e., sand) from surface of parts. Not changed-out, only make additions.
IR 07	Cold Water Rinse	Yes	Tap water.
IR 08	Cold Water Rinse	Yes	Tap water.
IR 09	Clear Iridite	No	Trivalent chromate solution (acidic). Not changed-out, only make additions.
IR 10	Gold Iridite	No	Hexavalent chromate solution (acidic). Not changed-out, only make additions.
IR 11	Cold Water Rinse	Yes	Tap water. Rinse for Gold Iridite.
IR 12	Cold Water Rinse	Yes	Tap water.
IR 13	Hot Water Rinse	Yes	Tap water.

2.2 Anodize Line

Anodizing is an electrolytic passivation process used to increase the thickness of the natural oxide layer on the surface of metal parts. The process is called “anodizing” because the part to be treated forms the anode electrode of an electrical circuit. Anodizing increases corrosion resistance and wear resistance, and provides better adhesion for paint primers and glue than bare metal. American Plating uses a sulfuric acid based anodizing process, which results in a harder and thicker coating and is easier to color. Please refer to the Facility’s Floor Plan (Attachment #2) which identifies the location of the Anodize Line and its associated tanks. The table below summarizes the contents of the Anodize Line tanks and identifies which tanks are hard-piped to the Facility’s WWT system.

Tank No.	Contents	Piped to WWT System	Comments
001	N/A	No	No longer in use.
002	Aluminum Strip	No	Strong alkaline chemical etch (pH 14) used to remove film on racks from anodizing process.
003	Hot Water Rinse	Yes	Tap water.
004	Color Seal	Yes	Nickel acetate based and used to fix dye on metal.
005	Rinse Tank	Yes	Tap water.
006	Red Dye	No	Solution containing acetic acid. Not changed-out, only make additions. If solution needed to be changed-out for some reason, would place material in drums and ship off-site. This material cannot go into the WWT system.
007	Blue Dye	No	Same comments as for Red Dye.
008	Gold Dye	No	Same comments as for Red Dye.
009	Cold Rinse	Yes	Tap water.
010	Black Dye	No	Same comments as for Red Dye.
011	Cold Water Rinse	Yes	Tap water.
012	Cold Water Rinse	Yes	Tap water.
013	Dead Rinse	No	Tap water.
014	N/A		No longer in use.
015	N/A		No longer in use.
016	Anodize Tank	No	1,100-gallon tank containing a solution of 11-13% sulfuric acid that is chilled using glycol.
017	Cold Rinse	Yes	Tap water.
018	Ammonium Bi-Flouride	No	Solution containing hydrofluoric acid used to remove silica (i.e., sand) from surface of parts. Not changed-out, only make additions.
019	Gold Iridite	No	Hexavalent chromate solution (acidic). Not changed-out, only make additions. Same as IR 10, just large tank for larger parts.
020	Rinse Tank	Yes	Tap water.

021	Deoxidizer	No	Solution of nitric acid. When solution is changed-out, it will be pumped into drums and introduced into the WWT system at "the pit."
022	Rinse Tank	Yes	Tap water.
023	Etch Cleaner		Alkaline chemical etch with a pH of 12 to 14.
024	Soak Cleaner		Detergent cleaner used to remove dirt, great, oils from parts.

During inspection of the Anodize Line, Ms. Henry asked the line operator, Mr. El Jones, how the sulfuric acid solution in Tank 016 is managed by the Facility when it is time to be changed-out. Mr. Jones stated that Tank 016 is changed out approximately every 30-days. At the time of change-out, the used sulfuric acid solution in Tank 016 will be pumped into an 1,100-gallon open top tank (used sulfuric acid tank) located directly next to Tank 016. The inspectors observed the used sulfuric acid tank which was open, unlabeled and undated. Please refer to Photo #2 MFP, #3 MFP, and #4 MFP. The used sulfuric acid tank is not hard-piped to the Facility's WWT system. The contents of the used sulfuric acid tank are pumped into drums and transferred to the Facility's WWT system for treatment.

With respect to the Iridite Line and Anodize Line tanks that are hard piped to the Facility's WWT system, the piping runs from such tanks are directed into a floor drain located at the entrance to the Facility's Anodize Line. The drain is located beneath the wood plank walkway and receives wastewaters from both the Iridite and Anodize lines. Please refer to Photo #5 MFP, #6 MFP, #7 MFP, and #8 MFP. At the time of the inspection, the sump pump associated with the floor drain failed, resulting in an overflow of process wastewaters onto the concrete floor of the Facility. The Facility immediately responded to address the problem and clean up the flooded area.

2.3 Zinc Barrel Line

The Zinc Barrel Line is used by the Facility to plate small parts, such as screws, with zinc. Zinc plating prevents oxidation of the metal substrate by forming a barrier and by acting as a sacrificial anode if this barrier is damaged. Please refer to the Facility's Floor Plan (Attachment #2) which identifies the location of the Zinc Barrel Line and its associated tanks. The table below summarizes the contents of the Zinc Barrel Line tanks and identifies which tanks are hard-piped to the WWT system.

Tank No.	Contents	Piped to WWT System	Comments
ZB 01	Soak Cleaner	Yes	Detergent cleaner (5% alkaline) used to remove dirt, grease, oils, etc. from parts. If required, this cleaner can be pumped to the WWT system for on-site treatment.
ZB 02	Electro Cleaner (ZB-2 Cleaner)	Yes	Alkaline (7%)

ZB 03	Fresh Water Rinse	Yes	Tap water.
ZB 04	Muriatic Acid	No	Used to pickle metal substrate; 30-40% muriatic acid. Typically not changed-out, only make additions. If changed-out, will be pumped into drums and treated in WWT system.
ZB 05	Fresh Water Rinse	Yes	Tap water.
ZB 06	Fresh Water Rinse	Yes	Tap water.
ZB 07	Fresh Water Rinse	Yes	Tap water.
ZB 08	Gold Chromate	No	Hexavalent chromate solution (alkaline). Typically not changed-out, only make additions. If changed-out, will be pumped into drums and treated in WWT system.
ZB 09	Bright Chromate	No	Trivalent chromate solution (acidic). Typically not changed-out, only make additions. If changed-out, will be pumped into drums and treated in WWT system.
ZB 10	Fresh Water Rinse	Yes	Tap water.
ZB 11	1% Nitric Dip	No	Solution of nitric acid used to brighten plated surface.
ZB 12	Fresh Water Rinse	Yes	Tap water.
ZB 13	Dead Rinse	No	Tap water. Contents of tank are used to add to zinc plating tank (ZBL 14).
ZB 14	Zinc Chloride	No	Mildly acidic zinc plating solution. Not changed-out, only make additions

2.4 Zinc Still Lines

The Facility operates two still zinc plating lines which are referred to as Still #1 and Still #2. The primary difference between the Zinc Barrel Line and the Zinc Still Lines is the use of cyanide in the Zinc Still Lines. Please refer to the Facility's Floor Plan (Attachment #2) which identifies the location of the Zinc Still Lines and associated tanks. Please note that there have been some changes in the Facility's operations that have not been accounted for in the attached Facility Floor Plan. For instance, the lines identified as "08 Hoist (ZN) Dept." and "07 Hoist (CAD) Dept" are now referred to as Still #1 and Still #2, respectively. And, as part of the Still #2 line, the Facility continues to operate one tank for cadmium cyanide. In addition to the line name changes, the ordering of the tanks has also changed slightly. The tables below summarize the contents of the Zinc Still Line tanks, and identify which tanks are hard-piped to the Facility's WWT system.

Zinc Still Line #1			
***Tank No.**	**Contents**	**Piped to WWT System**	**Comments**
ZH 01	Soak Cleaner	Yes	Detergent cleaner (5% alkaline) used to remove dirt, grease, oils, etc. from parts. If required, this cleaner can be pumped to the WWT system for on-site treatment.
ZH 02	Electro Cleaner	Yes	Alkaline (7%)
ZH 03	Cold Water Rinse	Yes	Tap water.
ZH 04	Muriatic Acid	No	Used to pickle metal substrate; 30-40% muriatic acid. Typically not changed-out, only make additions. If changed-out, will be pumped into drums and treated in WWT system.
ZH 05	Cold Water Rinse	Yes	Tap water.
ZH 06	Zinc Tank	No	Approx. 1,600-gallon tank that contains a zinc cyanide solution. Currently not in operation due to mechanical problems with rectifier.
ZH 07	Cold Water Rinse	Yes	Tap water. Directed to cyanide destruction prior to being mixed with non-cyanide wastewaters.
ZH 08	1% Nitric Acid Dip	No	Solution of nitric acid used to neutralize and brighten finish.
ZH 09	Bright Chromate	No	Trivalent chromate solution (acidic). Typically not changed-out, only make additions. If changed-out, will be pumped into drums and treated in WWT system.
ZH 10	Cold Water Rinse	Yes	Tap water.
ZH 11	Gold Chromate	No	Hexavalent chromate solution (alkaline). Typically not changed-out, only make additions. If changed-out, will be pumped into drums and treated in WWT system.
ZH 12	Cold Water Rinse	Yes	Tap water.
ZH 13	Hot Water Rinse	Yes	Tap water.
ZH 14	Dryer	No	Used to dry plated parts.

*Please note that empty tanks are not included in table.

Located in the floor next to Still #1, the inspectors observed a sump that was receiving process rinse waters, via piping, from the Zinc Still Lines, in addition to a stream of water that was running across the floor of the Facility (Photo #9 MFP and #10 MFP). Steam was observed coming off the water running across the floor. Mr. Ikpe stated that the sump is pumped to the Facility's WWT system. With respect to the water running across the floor, Mr. Ikpe stated it was steam condensate that the Facility directs into the sump to keep the process rinse waters from freezing. The inspectors did not observe the origin of the condensate water.

Zinc Still Line #2			
***Tank No.**	**Contents**	**Piped to WWT System**	**Comments**
ZH 01	Soak Cleaner	Yes	Detergent cleaner (5% alkaline) used to remove dirt, grease, oils, etc. from parts. If required, this cleaner can be pumped to the WWT system for on-site treatment.
ZH 02	Electro Cleaner	Yes	Alkaline (7%)
ZH 03	Cold Water Rinse	Yes	Tap water.
ZH 04	Muriatic Acid	No	Used to pickle metal substrate; 30-40% muriatic acid. Typically not changed-out, only make additions. If changed-out, will be pumped into drums and treated in WWT system.
ZH 05	Cold Water Rinse	Yes	Tap water.
ZH 06	Cold Water Rinse	Yes	Tap water.
ZH 07	Bright Chromate	No	Trivalent chromate solution (acidic). Typically not changed-out, only make additions. If changed-out, will be pumped into drums and treated in WWT system.
ZH 08	Cold Water Rinse	Yes	Tap water.
ZH 09	Gold Chromate	No	Hexavalent chromate solution (alkaline). Typically not changed-out, only make additions. If changed-out, will be pumped into drums and treated in WWT system.
ZH 10	Cold Water Rinse	Yes	Tap water.
ZH 11	Cold Water Rinse	Yes	Tap water.
ZH 12	Cadmium Tank	No	Contains a cadmium-cyanide solution.

*Please note that empty tanks are not included in table.

During inspection of the Zinc Still Lines, the inspectors observed a buildup of carbonate crystals, which contain cyanide, on the lip of the zinc-cyanide and cadmium-cyanide plating tanks (Photos #11 MFP and #12 MFP). According to Mr. Vizhansky, the buildup of carbonate crystals on the zinc-cyanide and cadmium-cyanide tanks indicates that there are too many carbonates in the plating solutions and that the plating solutions need to be reclaimed. The Facility reclaims the zinc-cyanide and cadmium-cyanide plating solutions by freezing such solutions which results in precipitation of the cyanide-carbonates. The precipitated cyanide-carbonates settle on the bottom of the tank/container. The reclaimed solution is decanted for reuse and the precipitated cyanide carbonates are put into drums and shipped off-site for disposal. Mr. Vizhansky stated that the Facility was planning to reclaim the zinc-cyanide plating solutions the week of

February 14th because the Facility would not be heated due to scheduled boiler maintenance.

2.5 Precious Metal Department

The Facility plates silver, copper, tin/lead, matt tin, bright tin, and electroless nickel in its Precious Metals Department. Please refer to the Facility's Floor Plan (Attachment #2) which identifies the location of the Precious Metal Department. Due to the number of tanks associated with the Precious Metal Department, a listing of each tank and its contents was not documented.

During inspection of the Precious Metals Department, it was noted that cyanide is used in the silver and copper plating lines. Mr. Vizhansky stated that in the event cyanide containing plating baths become spent and need to be changed out, the plating baths will be drummed and shipped off-site for disposal. Cyanide containing rinse waters associated with the silver and copper plating lines are treated on-site in the Facility's WWT system. These cyanide containing wastewaters are first sent through a cyanide destruction tank prior to being mixed with non-cyanide containing rinse waters in the Facility's WWT system.

Sulfuric acid is used in the matt tin and bright tin plating lines and associated rinse waters are treated in the Facility's WWT system. And, the Facility's tin/lead plating tank is currently not is use (Photo #13 MFP).

2.6 On-Site Facility Laboratory

Mr. Vizhansky stated that all the drains located in the laboratory are directed to the Facility's WWT system.

- **Wastewater Treatment Process**

The WWT process takes place in a series of elevated 1,000-gallon mixing tanks located within secondary containment (Attachment #3: WWT Process Sketch). For Photographs referenced in the WWT Process section, please see the Wastewater Treatment Process (WWTP) Photographic Log in Attachment #4. The process mixing tanks are fed by a series of 250-gallon chemical feed tanks directly which are located directly below the mixing tanks.

The first treatment tank (T - 1) receives only cyanide rinses for treatment to destroy the cyanide bond. Sodium hypochlorite is fed from the tank below. The discharge from the cyanide destruct unit goes to the pH adjustment tank (T - 3).

The second treatment tank (T - 2) is a chrome reduction tank that receives only chrome plating wastewaters. Sodium Meta Bisulfate is fed from the tank below to reduce the hexavalent chromium to trivalent chromium. Discharge from the chrome reduction process tank goes to the pH adjustment tank (T - 3).

The pH adjustment tank (T - 3) combines the flows from tanks T - 1 and T - 2 with the other wastewater from the in-ground accumulation tank known as "the pit." The pH is raised to between 10 & 12 by the addition of caustic from a feed tank below. The high pH causes the dissolved metals to come out of solution. Discharge from the pH adjustment tank goes to the flocculation tank (T - 4).

The flocculation tank (T - 4) receives the pH adjusted plating wastewaters and adds a flocculent and a coagulant from their respective feed tanks below. From the flocculation tank the wastewater goes to the clarifier (T - 5).

The clarifier (T - 5) is a rectangular tank that sits on the floor, but its height raises the level of the elevated tanks. The feed from the flocculation tank comes into the middle of the clarifier. The clear water overflows from the top of the unit and flows by gravity into a 2,500 gallon clean water storage tank (T - 6). The settled sludge is pumped from the bottom of the clarifier to the sludge thickening tank (T - 7).

The clear water tank (T - 6) is pumped to the small rectangular tank near "the pit" (Photos #1 - #3 WTTP) where it overflows and moves by gravity to the city sewer system.

The sludge thickening tank (T - 7) (Photo #4 WWTP) discharge goes to the filter press (Photo #5 WWTP) to dewater the sludge to filter cake. There is also an overflow pipe at the top of the tank which keeps the contents from spilling over the side of the tank. The overflow pipe goes to ground level (Photo #6 WWTP & Photo #7 WWTP) and then runs in the trench and eventually discharges to the sump in the floor (Photo #8 WWTP & Photo #9 WWTP). At the time of the inspection, the filter press was not in operation and the generated sludge was all going out the overflow pipe.

The filter press is operated in such a way that it cannot keep up with the amount of sludge being generated. The environmental manager, Mr. Barry Ikpe, said that the sludge is left in the press for a couple of hours to maximize the water removal and produce a dryer sludge for shipping. However, the wastewater operator said that they had run out of cubic yard fabric sacks to put the sludge in and that is why the thickening tank was overflowing.

The WWT process is located in a contained area. A sump pump (Photo #10 WWTP) is used to pump drip and steam condensate to the sump in Photo #8 of the WWTP Photographic Log.

Near the filter press the inspectors observed a full cubic yard sack (Photo #11 WWTP) of sludge which was open when first viewed. The sack was labeled with a hazardous waste label and dated 1/20/2011 (Photo #12 WWTP). In the same location there were two open small drums. One of the drums was partially full and was labeled as with a hazardous waste label with the words "sludge from trough" and dated 11/26/10. The other drum was unlabeled, undated, and it had a small amount of what appeared to be sludge in the bottom.

4.0 Trench and Sump Evaluation

EPA inspectors Ma, Crutchley, and Young were led by Mr. Ikpe to observe the trench, which was located near the Facility's WWT area. For photographs referenced in this section, please see the Trench and Sump (T&S) Photographic Log in Attachment #5.

EPA inspectors observed two pipes inside the trench leading towards the sump (Photo #1 T&S). Mr. Ikpe stated that the larger PVC pipe in the trench is connected to the WWT process sludge thickening tank (overflow pipe), and the smaller metal pipe in the trench is connected to another sump that holds drip and steam condensation from the WWT process secondary containment trench. For a description from where the smaller pipe in the trench originates, please see WWTP Section 3.0 and the WWTP Photographic Log Photo #10.

Mr. Ikpe lifted the lid to the sump at the end of the trench, and used a wooden stick to show the depth of the liquid in the sump (Photo #2 T&S and #3 T&S). At the time of the inspection the liquid in the sump was measured to be about 1-foot deep. EPA inspectors observed a drain in the sump, which Mr. Jonny Naumann indicated has about a 4-inch diameter (Photo #4 T&S). Mr. Ikpe indicated that the liquid and sludge collected in the sump gravity drains back into the in-ground "pit."

The trench begins at a wall that separates the WWT area from the Facility boiler room. At the beginning of the trench, EPA inspectors observed two pipes that discharge into the trench (Photo #5 T&S - #7 T&S). Mr. Johnny Naumann indicated that the larger PVC pipe contains water from the Facility's boiler blow down, and the smaller pipe feeds tap water that is "softened" in neutralization tanks in the boiler room prior to discharging into the trench. Both pipes originate from the Facility boiler room, and run through a hole in the bottom of the wall and then into the beginning of the trench.

In the boiler room of the Facility, EPA inspectors observed a large fiberglass tank that is used to collect water from the Facility's boiler blow down (Photo #8 T&S). The pipe connected to the bottom of the tank feeds boiler blow down into the tank. The pipe leaving the top of the tank gravity feeds boiler blow down into the trench on the other side of the boiler room wall (Photo #9 T&S and #10 T&S). The pipe that gravity feeds from the fiberglass tank into the trench leaves the boiler room through a hole in the wall (Photo #11 T&S and #12 T&S).

On the other side of the boiler room wall EPA inspectors observed the sludge thickening tank (Photo #13 T&S) and the WWTP filter press. EPA inspectors also observed a pipe connected to the top of the sludge thickening tank, as well as sludge buildup on the top of the sludge thickening tank (Photo #14 T&S). The Facility representatives indicated that the 4-inch diameter PVC pipe at the top of the sludge thickening tank conveys overflow sludge from the tank. The pipe runs from the top of the tank and into the trench (Photo #15 T&S). The pipe runs along the length of the trench and discharges into the sump.

Several photos were taken along the length of the piping in the trench (Photo #16 T&S –#22 T&S). EPA inspectors observed liquid and brown sludge in the trench located under the pipe that originates from the sludge thickening tank (Photo #18 T&S). The piping in the trench used to convey overflow from the sludge thickening tank was fitted with a tightened black rubber boot (Photo #17 T&S). EPA inspectors observed a buildup of hardened material near the rubber stopper. Mr. Ikpe stated that the material is calcium buildup from the water that drains into the trench. He indicated that the material is removed from the trench, and sent offsite for disposal along with the sludge generated from the Facility's WWTP.

Mr. Ikpe indicated that the trench was lined with concrete, and he stated that the trench was relined with concrete following EPA's previous CEI, which was on August 4, 2009. He was unsure of the exact date it was reconcreted, but he indicated that it was done by Facility maintenance personnel. Mr. Ikpe explained that the underlying layer of the trench is terracotta, and the trench was reconcreted twice prior to the latest relining. At the time of the inspection, the Facility was unsure of the type of concrete used to line the trench. Subsequent to the inspection Mr. Ikpe provided, via e-mail, a copy of the MSDS for the concrete that was used to reline the trench (Attachment #6).

4.1 Trench & Sump Measurements

EPA Inspector Gerard Crutchley and EPA Inspector Justin Young took physical measurements of the trench using a measuring tape. The trench was measured to be 44-feet and 10-inches in length from the wall to the point where the trench corners towards the sump (Photo #23 T&S). The length from where the trench corners to the sump is about 4-feet and 5-inches long. The trench is about 10 to 11-inches wide, and the sump was measured to be 1-foot and 10-inches deep with a 2-foot and 1.5-inch diameter. The piping that conveys sludge overflow from the sludge thickening tank was measured to be 27-feet and 11-inches long from the point the piping enters the trench to the point it corners towards the sump. A sketched diagram of the trench and sump is provided in Attachment #7.

5.0 XRF Readings

EPA inspector Young, with assistance from EPA inspector Crutchley, used an INNOV-X XRF unit to measure for metals along different areas of the trench and WWT area. Attachment #8 provides a data summary of the XRF measurements taken during the inspection. Nine XRF readings were taken by EPA, and a small plastic bag was used to mark the point at which the readings were taken.

The first XRF reading (Reading #5) was taken directly on the concrete inside of the trench at the entrance to the sump at 10:38 AM (Photo #24 T&S). The second XRF reading (Reading #7) was taken from the inside wall of the trench, directly on the concrete in an area where the trench corners towards the sump at 10:50 AM (Photo #23 T&S). The third XRF reading (Reading #8) was taken at 10:54 AM from inside the trench directly on the concrete at about 16 feet and 11 inches from the point where Reading #7 was taken (Photo #25 T&S). The fourth XRF reading (Reading #9) was taken directly on the floor next to the sludge thickening tank at 10:58 AM (Photo #26 T&S). The fifth XRF reading (Reading #10) was taken on the floor under the filter press at 11:02 AM (Photo #27 T&S). The sixth XRF reading (Reading #11) was taken at 11:08 AM on the side of the trench, where the piping from the sludge thickening tank connects to the piping inside the trench (Photo #28 T&S).

The seventh XRF reading (Reading #12) was taken at 11:18 AM from an open 30-gallon drum near the sludge thickening tank (Photo #29 T&S). The container had a shovel inside of it, and a small amount of sludge contained inside of it. At the time of the inspection the container was open, unlabeled, and undated. The eighth XRF reading (Reading #13) was taken at 11:40 AM inside an open steel drum, next to the drum where XRF Reading #12 was taken (Photo #30 T&S). The drum was about partially filled with what appeared to be wet sludge, dated 11/26/10, and labeled with the words "Hazardous Waste" and "sludge from trough." The ninth XRF reading (Reading #14) was taken from spent blast media under the blasting unit across from the WWT area.

6.0 Attachments

- Metal Finishing Processes Photographic Log
- Facility's Floor Plan
- Wastewater Treatment Process Sketch
- Waste Water Treatment Process (WWTP) Photographic Log
- Trench and Sump Photographic Log
- MSDS for Trench and Sump Concrete
- Diagram of the Trench and Sump
- XRF Measurement Data